

Claims:

1. A solid drug delivery composition comprising one or more NO-donating Non Steroidal Antiinflammatory Compound(s) (NO-donating NSAID(s)) absorbed into porous particles.
- 5 2. The solid drug delivery composition according to claim 1 wherein one or more NO-donating NSAID(s) in oily form is absorbed into porous particles.
- 10 3. The solid drug delivery composition according to claim 1 wherein one or more NO-donating NSAID(s) in melted form is absorbed into porous particles.
- 15 4. The solid drug delivery composition according to any one of claims 1 to 3 wherein the porous particles are selected from the group consisting of dibasic calcium phosphate, anhydrous, microcrystalline cellulose and pregelatinised starch or a mixture thereof.
5. The solid drug delivery composition according to any one of claims 1 to 4 wherein the porous particles are spherical with a particle size between 50 and 500 μm .
- 20 6 The solid drug delivery composition according to claim 5 wherein the particle size of the spherical porous particles is between 100 and 150 μm .
7. The solid drug delivery composition according to any one of claims 1 to 4 wherein the pore size of the porous particles is between 10 and 1000 \AA .
- 25 8. The solid drug delivery composition according to claim 7 wherein the pore size of the porous particles is between 20 and 750 \AA .
9. The solid drug delivery composition according to claim 8 wherein the pore size of the porous particles is between 50 and 500 \AA .
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10. The solid drug delivery composition according to any one of claims 1 to 9 wherein one or more NO-donating NSAID(s) is absorbed together with one or more surfactant(s) into the porous particles.
- 5 11. The solid drug delivery composition according to any one of claims 1 to 9 comprising a combinations of
 - a) porous particles comprising an NO-donating NSAID and one or more surfactant(s) and
 - b) porous particles comprising an NO-donating NSAID without surfactant.
- 10 12. The solid drug delivery composition according to any one of claims 10 or 11 wherein the NO-donating NSAID(s) are the same.
- 15 13. The solid drug delivery composition according to any one of claims 10 to 12 wherein the surfactant(s) is non-ionic.
14. The solid drug delivery composition according to claim 13 wherein the surfactant(s) is a block co-polymer.
- 20 15. The solid drug delivery composition according to claim 13 wherein the surfactant(s) is a poloxamer.
16. The solid drug delivery composition according to claim 13 wherein the surfactant(s) is a polyoxyethylene polyoxybutylene block copolymer.
- 25 17. The solid drug delivery composition according to any one of claims 10 to 16 wherein the ratio NO-donating NSAID(s):surfactant(s) is within the range from 1:0.1 to 1:10 (w/w).
18. The solid drug delivery composition according to claim 17 wherein the ratio NO-donating NSAID(s):surfactant(s) is within the range from 1:0.3 to 1:3 (w/w).
- 30 19. The solid drug delivery composition according to any one of claims 1 to 18 wherein the NO-donating NSAID is an NO-donating naproxen.

20. The solid drug delivery composition according to claim 19 wherein the NO-donating naproxen is 4-(nitrooxy)butyl-(S)-2-(9-methoxy-2-naphthyl)-propanoate.

5 21. The solid drug delivery composition according to any one of claims 1 to 18 wherein the NO-donating NSAID is an NO-donating diclofenac.

22. The solid drug delivery composition according to claim 21 wherein the NO-donating diclofenac is 2-[(2,6-dichlorophenyl)amino]benzeneacetic acid 4-(nitrooxy)-butyl ester.

10 23. The solid drug delivery composition according to claim 21 wherein the NO-donating diclofenac is 2-[2-(nitrooxy)ethoxy]ethyl {2-[(2,6-dichlorophenyl)amino]phenyl}acetate.

15 24. The solid drug delivery composition according to any one of claims 1 to 18 wherein the NO-donating NSAID is an NO-donating ketoprofen.

25. The solid drug delivery composition according to claim 24 wherein the NO-donating ketoprofen is 2-(3-benzoyl-phenyl)-propionic acid 3-nitrooxy-propyl ester or 2-(3-benzoyl-phenyl)-propionic acid 4-nitrooxymethyl-benzyl ester.

20 26. The solid drug delivery composition according to any one of claims 1 to 25 wherein the porous particles comprising an NO-donating NSAID, optionally mixed with one or more surfactant(s), are mixed together with enteric coated pellets comprising a H⁺, K⁺-ATPase inhibitor.

25 27. The solid drug delivery composition according to claim 26 wherein the porous particles comprising an NO-donating naproxen, an NO-donating diclofenac, an NO-donating ketoprofen or an NO-donating ketorolac, optionally mixed with one or more surfactant(s), are mixed together with enteric coated pellets comprising omeprazole, esomeprazole, 30 lansoprazole, pantoprazole or rabeprazole, leminoprazole or a pharmaceutical acceptable salt thereof.

28. Process for producing the porous particles comprising one or more NO-donating NSAID(s) according to any one of claims 1 to 25 comprising mixing the NO-donating NSAID(s), optionally in oily or melted form, with porous particles.

5 29. Process for producing the porous particles comprising one or more NO-donating NSAID(s) according to any one of claims 1 to 25 comprising:

- dissolving the NO-donating NSAID(s) in one or more alcohol(s),
- adding the porous particles during stirring,
- evaporating the added alcohol(s),

10 d) recovering the porous particles comprising the NO-donating NSAID(s), with a) and b) in optional order.

30. Process for producing the porous particles comprising one or more NO-donating NSAID(s) according to any one of claims 1 to 25 comprising:

15 a) melting the NO-donating NSAID(s),

- adding the porous particles,
- stirring the obtained mixture,

20 d) recovering the porous particles comprising the NO-donating NSAID(s), with a) and b) in optional order.

31. Process for producing porous particles comprising one or more NO-donating NSAID(s) and one or more surfactant(s) according to any one of claims 1 to 25 comprising:

- mixing the NO-donating NSAID(s) and the surfactant(s),
- adding the porous particles,

25 c) stirring the obtained mixture,

- recovering the porous particles comprising the NO-donating NSAID(s) and the surfactant(s),

with a) and b) in optional order.

30 32. Process for producing the porous particles comprising one or more NO-donating NSAID(s) and one or more surfactant(s) according to any one of claims 1 to 25 comprising:

- a) melting NO-donating NSAID(s) and the surfactant(s),
- b) adding the porous particles,
- c) stirring the obtained mixture,
- d) recovering the porous particles comprising NO-donating NSAID(s) and the surfactant(s),
5 with a) and b) in optional order.

33. Process for producing the porous particles comprising one or more NO-donating NSAID(s) according to any one of claims 1 to 25 comprising:
 - 10 a) mixing the NO-donating NSAID(s) and the porous excipient,
 - b) adding water, stepwise, continuously, in one portion,
 - c) extruding the obtained mixture into particles,
 - d) spheronising the obtained particles ,
 - e) drying the obtained mixture,
 - 15 f) recovering the porous particles comprising the NO-donating NSAID(s).

34. The process according to claim 33 wherein the NO-donating NSAID(s) in step a) is pre-heated.
- 20 35. The process according to any one of claims 28 to 34 wherein the NO-donating NSAID(s) are the same.

36. The solid drug delivery composition comprising the porous particles according to any one of claims 1 to 25 wherein the porous particles have been produced according to any 25 one of claims 28 to 35, are mixed with pharmaceutically acceptable excipients and compressed into a tablet.

37. The solid drug delivery composition comprising the porous particles according to any one of claims 1 to 25 wherein the porous particles have been produced according to any 30 one of claims 28 to 35, are filled into a capsule.

38. The solid drug delivery composition according to claims 36 and 37 wherein the capsules or tablets are coated.
39. Use of the solid drug delivery composition according to any one of the claims 1 to 27 for the manufacture of a medicament for treating pain.
40. Use of the solid drug delivery composition according to any one of the claims 1 to 27 for the manufacture of a medicament for treating inflammation.
- 10 41. A method for the treatment of pain comprising oral administration to a patient suffering therefrom a solid compound delivery composition according to any one of claims 1 to 27.
- 15 42. A method for the treatment of inflammation comprising oral administration to a patient suffering therefrom a solid compound delivery composition according to any one of claims 1 to 27.